

A MONOGRAPHIC CATALOGUE OF THE MYMARID GENUS
CAMPTOPTERA FOERSTER, WITH DESCRIPTION OF
ONE NEW NORTH AMERICAN FORM.

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In recording the discovery of another new form of this genus from North America, I have thought it helpful to bring together the original descriptions of the few known species, and to sum up our knowledge concerning the group. What we know of the genus, however, amounts practically to very little. But three species have hitherto been described, none of them any too well.

HISTORY OF THE GENUS.

The genus *Camptoptera* was originally characterized by Arnold Foerster in 1856 (Foerster, 1856, p. 116) as follows:

“28. Mymaroidae. Die mir bekannten Gattungen lassen sich nicht alle, ohne die ♂ und ♀ zu trennen, in eine einfache und klare Uebersicht bringen. Das nachfolgende Schema wird daher einige Gattungen doppelt aufführen:

a. Die Tarsen fünfgliedrig.

b. Der Hinterleib deutlich gestielt.

c. Die Fühler beim ♂ zehn-, beim ♀ neungliedrig.

Camptoptera m.*)

cc. Die Fühler beim ♂ dreizehn-, beim ♀ eilfgliedrig.

Ooctonus Hal.

bb. Der Hinterleib sitzend oder fast sitzend.

d. Die ♂ ” etc. p. 116.

Further on (Id., p. 119), he gives the characters of the group as follows:

“Unter dem Namen *Camptoptera* habe ich eine pentamere Gattung aufgestellt, welche durch ihre winzige Form sich nur mikroskopisch bestimmen lässt. Da ich dieses Thierchen erzogen habe und lebend untersuchen konnte, so will ich mich hier etwas weitläufiger darüber verbreiten. Der Gattungscharakter lautet:

Tarsen fünfgliedrig; Fühler beim ♂ zehn-, beim ♀ neungliedrig; Hinterleib kurz gestielt; Flügel schmal, mit einem breiteren Absatz nahe an der Basis und hinter demselben gebogen.”

A description of the species (*papaveris*) upon which the genus was founded then follows in the next paragraph; although this

“*)*Camptoptera* von χαμπτός, ή, όν, gekrümmt, gebogen und πτερόν, τό, der Flügel. Die Vorderflügel sind in dieser Gattung ziemlich stark gebogen.”

species is not designated as the type, under the code it becomes such (monotypical genus, Stiles, 1905), and was formally designated as such by Ashmead (1904).

Still later on, in the same work, under the heading *Nachtrag*, Foerster (1856, p. 144) proposed to change the name of the genus from *Camptoptera* to *Pteroclisis* on the ground that "da bereits durch *Presl* der gleichbedeutende Name *Camptopteris* in die fossile Flora eingeführt wurde." This proposed change rightly was not accepted by later authors and under both the present code (Stiles, 1905, p. 10, independence from botany; p. 25, page precedence) and the law of priority, the second name is abandoned. The incident is stated as a matter of history.

The genus has received little or no attention since its establishment by Foerster, but later authors (Provancher, 1889; Cresson, 1887; Ashmead, 1904) have persisted in spelling it *Camptotera*.

The former author gives the following generic description (Provancher, 1889):

"Gen. 11. Camptotère. *Camptotera*, Först.

Antennes insérées sur le front, non près de la bouche. Abdomen plus ou moins arrondi sur les côtés. Ailes postérieures très petites, presque linéaires, sans nervure médiane. Abdomen pétiolé; tarsi de 5 articles.

Une seule espèce rencontrée."

DISTRIBUTION OF THE GENUS.

This genus is now represented in Europe and North America; *papaveris*, the European species was described from Germany; Provancher described *clavata* from the vicinity of Quebec, Canada, while *metotarsa* Girault was described from Virginia and *pulla* Girault is now described from Illinois.

HOST RELATIONS OF THE GENUS.

Of the species *clavata*, *metotarsa* and *pulla* nothing is known about their hosts, all of them having been described from captured specimens; however, *papaveris*, says Foerster, "erzog ich vom 12. bis 18. August 1851 aus Mohnkapseln von *Papaver Rhoeas* und *dubium*, worin die Gallen von *Aulax Rhoadis* sich befanden." Foerster (1856, p. 120) further adds in the next paragraph: "Ob nun die Larven der Gattung *Camptoptera* an den Larven oder in den Eiern der Gallerzeuger, hier des *Aulax Rhoadis* *Hart.* parasitisch leben oder die *Cecidomyia* angreifen, oder gar die übrigen

Parasiten vernichten, darüber habe ich mir keinen Aufschluss verschaffen können, wird aber jedenfalls von Interesse sein und hoffentlich auch von anderer Seite nicht ohne Beachtung bleiben." The species was reared from poppy capsules containing a cynipid gall and from which were reared also a cecidomyiid and three other species of Hymenoptera; its host relations are therefore problematical and it would be hazardous to attempt to connect it with any of the possible hosts mentioned. This being the case, it is seen that at present, of the four species of the genus, nothing is known concerning their economy in nature. De Dalla Torre (1898, footnote) on the contrary makes Foerster's rearing a definite one, giving the host as *Cynips papaveris* (Perris) Mayr, and the authority as Rondani. This *Cynips* is synonymic with *Aulax rhoeadis*. The assumption in regard to this host is all the more arbitrary because of what Foerster himself states in regard to the rearing. Kaltenbach (1874) also gives Foerster's rearings.

Family Mymaridae.

Subfamily Gonatocerinae.

Tribe Ooctonini.

Genus *Camptoptera* Foerster, 1856, pp. 116, 119, 144.

(Type:—*Camptoptera papaveris* Foerster).

1. *Camptoptera papaveris* Foerster.

Foerster, 1856, pp. 119–120. Kirchner, 1867. Snellen van Vollenhoven, 1873. De Dalla Torre, 1898, p. 431. Ashmead, 1904, pp. 362, 369.

“Bräunlich, der Schaft mit dem Stielchen, der Hinterleibsstiel und die Beine gelb; die Füße fast unmerklich dunkler als die übrigen Theile der Beine. Das ♂ hat die Geisselglieder alle ungefähr gleich lang, jedoch so, dass die vier bis fünf ersten Glieder fast unmerklich länger erscheinen, als die folgenden; das letzte ist mit einer sehr feinen pfriemenförmigen Spitze versehen. Die Fühler stehen hart am innern Augenrande. Beim ♀ ist das erste Geisselglied etwas länger als das Stielchen, das zweite viel länger als das erste, das dritte etwas kürzer als das erste und das vierte sogar kürzer als das dritte. Die beiden folgenden unter sich genau von gleicher Länge, einzeln genommen wenig, aber doch merklich kürzer als das dritte. Das letzte Glied bildet eine ziemlich stark verlängerte, fast elliptische Keule von der Länge der drei vorangehenden Glieder. Die beiden der Keule vorhergehenden Glieder sind auch ein wenig dicker als die übrigen Geisselglieder.

Camptoptera Papaveris m. ♂ ♀, die einzige Art dieser Gattung, erzog ich vom 12. bis 18. August 1851 aus Mohnkapseln von *Papaver Rhoeas* und *dubium*, worin die Gallen von *Aulax Rhoeadis* sich befanden. Aus denselben Kapseln und zu derselben Zeit erzog ich ferner: *Pteromalus Papaveris* m. ♂ ♀. *Cecidomyia Papaveris*

Wimm.**)^a *Pezomachus Papaveris* m. ♂ ♀ (das ♂ ungeflügelt!!!) *Lochites Papaveris* m. ♂ ♀ (worüber bereits oben Seite 44 berichtet wurde!) und ein kleiner Encyrtus.

Ob nun die Larven der Gattung *Camptoptera* an den Larven oder in den Eiren der Gallerzeuger, hier des *Aulax Rhocadis* Hart. parasitisch leben oder die *Cecidomyia* angreifen, oder gar die übrigen Parasiten vernichten, darüber habe ich mir keinen Aufschluss verschaffen können, wird aber jedenfalls von Interesse sein und hoffentlich auch von anderer Seite nicht ohne Beachtung bleiben." pp. 119-120.

This description is rather brief, lacks detail and it is more or less doubtful if the species could be again recognized from it, so that I have drawn up another from a female specimen nicely mounted in balsam by Mr. Frederick Enock of London and determined by an English authority; as no other valid specimens of the species exist, so far as I am aware, this description definitely fixes the species; it will be seen readily that it agrees in general with the original, though drawn up before that description was consulted.

Redescription of *Camptoptera papaveris* Foerster, female.

Female.—Length, 0.91 mm.; minute; visible to naked eye. General color yellowish brown; legs and basal five joints of antennae paler; ocelli red; eyes dark; vertexal carina present, usual. Fore wings slightly infumated at basal one-third, normal, curved at the apical fourth, with the usual dilatation along the caudal margin near base, the usual dusky yellow margins and with one principal row of discal cilia in the distal half of the wing (excluding the ones along the margin, dorsad), joined by two others on each side, near the cephalic and caudal margins respectively, of the wings, in the apical fourth; proximad of the apical fourth of the wing, these two lines of cilia become lost in the margins; venation dusky yellowish, inconspicuous. Hind wings hyaline, with two main rows of discal cilia, one on each side near the margins, in the distal half of the wing; marginal cilia of hind wings nearly as long as those of the fore wings, and with the usual colorless spot or area near their bases, forming the clear whitish path a short distance beyond the distal end of the wing, and which follows the outline of the wing margin at that point. Petiole apparently acute at its center, lateral aspect (as in *pulla*) and with a clear spot at its base, dorsal aspect; posterior tibiae slender, longer than the posterior tarsi; the joints of the tarsi subequal, the basal joints inclined to be slightly longer.

Antennae longer than the body; scape convexly curved, about as long as the combined lengths of the pedicel and 1st funicle joint; pedicel conic-ovate, its cephalic margin serrate, thicker than the scape and much more so than the slender first three funicle joints, but nearly one-half shorter than the first funicle joint; the latter slender, cylindrical, slightly narrowed in the middle, one-third shorter than funicle 2 and the next to the longest joint of the funicle; funicle 2 the longest funicle joint, long and slender, one-third longer than 1, longer than the scape and about equal to or slightly longer than the combined lengths of the next two joints (funicles 3 and 4), subequal to the club in length, but one-half narrower; funicle joints 1-3 of the same width, narrow and cylindrical; funicle 3 a little over half the length of funicle 2 and slightly enlarged at the apex, longer than either of the following joints and also the pedicel; next three joints (funicles 4-6) gradually enlarging to club; funicle 4 cylindrical oval, distinctly wider than 3 and one-fourth shorter, subequal in length to 5; the latter slightly wider; funicle

a. The footnote to which the asterisks refer is omitted here, having no relevancy.—A. A. G.

6 one-fourth shorter than the two preceding, ovate, subequal in length to the pedicel, the shortest funicle joint; club ovate, subequal to the combined lengths of the three preceding joints (funicle 4-6), and from one-third to one-half wider than funicle 6, and from 2 to 3 times the width of funicles 1-3, longer and wider than the scape; more slender in proportion to the other joints than usual. (Fig. 1. Flagellum of female, the setae omitted.)

(From 1 ♀, 2-3 inch objective Bausch and Lomb.)

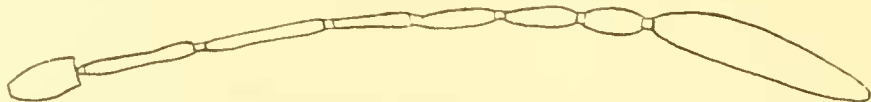


Fig. 1. Flagellum of *Camptoptera papaveris* Foerster female greatly enlarged.

Redescribed from a specimen beautifully mounted in balsam by Mr. Frederick Enoch of London, and being one determined by an English authority and in the collection of Dr. L. O. Howard.

Very similar, excepting in coloration and wing characters, to *pulla* Girault. The antennae are very similar.

2. *Camptoptera clavata* Provancher.

Provancher, 1889, p. 404. De Dalla Torre, 1898, p. 431.

“**Camptotere en-massue.** *Camptotera clavata*, n. sp.

♀—Long. .09 pcc. Noire, polie, brillante, les antennes et les pattes jaune-orange. Face inférieure; antennes insérées sur un rebord du front, de 10 articles ♂ et 9 articles ♀. Cuisses plus ou moins renflées; tarses de 5 articles. Abdomen pédiculé, le reste formant une massue en pointe à l'extrémité.—Ste Gertrude.”

This brief, general description is inadequate for recognition of the species, which on this account is probably lost to science and will have to be rediscovered and renamed. The whereabouts of the type is unknown to me.

3. *Camptoptera metotarsa* Girault.

Girault, 1905, p. 91.

“Female. Length, 0.90 mm.

Shining black, the abdomen polished black. Legs, excepting the coxae and apical joint of tarsi, basal three-fourths of the scape, and the venation, brown.

Head about as wide as the thorax, the eyes subovate, coarse, and very dark red; ocelli inconspicuous. Head and thorax coarsely shagreened, the latter short and convex, slightly longer than abdomen; parapsidal furrows absent. Abdomen depressed, short, oval. Legs long, the first tarsal joint long, the coxae rather large and coarsely shagreened, the posterior femur with a convexity or swelling in the middle of its upper margin. Wings iridescent, very slightly clouded, the fore wings narrow, curved, the marginal fringes rather long. Body nearly hairless.

Antennae elbowed, about as long as the body, 9-jointed. Scape very long, subclavate, narrow basally, about as long, or not quite so, as the next three joints combined, or about five times the length of the pedicel. Pedicel short, very much smaller, obconic. Joints 3 and 4 slender, cylindric, 4 longer, about twice the length of the pedicel, both slenderer than the scape and pedicel; 5, 6, and 7 equal, columnar, stouter than 3 and 4, but much shorter, yet far longer than the pedicel. Joint 8 equal to 5, 6 and 7, but slightly stouter. Club cylindric, not as long as the scape, but much stouter, about equal in length to 6, 7, and 8 combined.

From a single female captured while jarring peach at Arlington Virginia, June 2, 1905. A rather large and striking species.

Type.—No. 8941, United States National Museum." 1 ♀, tagmounted. Male, unknown.

This description also is not as detailed as it might be. The type, being an unique, has not been accessible, but Mr. J. C. Crawford, of the United States National Museum, Division of Insects, at my request, kindly furnished the following additional and important descriptive details: The petiole is acute or barbed at the lateral margins, as in *pulla*; the vertexal carina is present; and there are four rows of discal cilia on the fore wings—one near the cephalic margin; two, not in stright lines, along the middle portion of the wing, one on each side of a darkened line on the wing, the line representing an obsolete vein; and the fourth near the caudal wing margin. I am also informed that the type specimen is broken, the head and thorax together parted from the abdomen, but remounted on the same tag.

4. *Camptoptera pulla* species nova.

Female.—Length, 0.84 mm. Minute.

General color uniformly greyish black (near cologne earth); scape, pedicel, 1st funicle joint (less so) and legs (including at least the intermediate coxae, the others not visible) all pale clay yellow; remaining antennal joints concolorous with body, the first funicle joint intermediate in color, dusky yellow; eyes and ocelli dark red; usual vertexal carina present; thorax longer than abdomen, the latter subnapiform, widest and acute at proximal third and narrowing gradually to a point caudad, and truncately oblique to the petiole, cephalad; petiole short, acutely produced or barbed laterad just caudad of its center and with a small circular whitish dot in the middle of its dorsal aspect at base. Body apparently impunctate. Legs normal, the tarsal joints subequal, the proximal tarsal joint not much longer than any of the others, but subequal to them. Wings normal, longer than body; fore wings hyaline, slightly fumated near base, and with a slight but usual dilatation along the caudal margin at proximal fourth, curved at the apical fourth, and with moderately long marginal fringes which have the usual clear path around the edge of the wing at apex; discal cilia numerous, about from 3 to 4 longitudinal rows; venation dusky, inconspicuous; apical margin of

fore wing more pronounced. Hind wing fumated throughout, its petiole yellowish; curved at about its center, linear, and with at least two longitudinal rows of discal cilia, very close together and central. Ovipositor very slightly exerted.

Antennae 9-jointed; scape curved, normal, longer than pedicel, the latter ovate, with the apical end truncate and serrated, and but two-thirds the length of the first funicle joint. Funicle joints 1-3 cylindrical, linear, 1 one-third shorter than 2 which is longest, subequal to the scape, and twice the length of funicle joint 3, the three joints filiform; funicle joints 4-6 cylindrical oval, wider, subequal in length but 4 is somewhat longer than the others, which, however, are somewhat wider than that joint; funicle 4 subequal in length to joint 3, joints 5 and 6 each becoming slightly shorter; club long, undivided, cylindrical ovate, longer than scape or funicle joint 2, and about equal the combined lengths of the three apical funicle joints. Setae present, but not very numerous and minute. Antennae longer than the body. (Fig. 2. Flagellum of female, the setae omitted. The club is a little too long in the drawing.)



Fig. 2. Flagellum of *Camptoptera pulla* Girault, female greatly enlarged.

(From two specimens, 2-3 inch objective. Bausch and Lomb.)

Male.—Unknown.

Described from two females mounted in balsam and collected on a window in a woodshed, Urbana, Illinois, July 15 and 17, 1908 (J. Douglas Hood.) Several other specimens were observed July 17, 1908, on the same window suspended in a spider's web, but because of their minuteness were lost.

Type.—Accession No. 39116, Illinois State Laboratory of Natural History, Urbana, Illinois, 1 ♀ in balsam.

This species resembles closely in structure of the antennal joints, the wings, and that of the body, the type of the genus, Foerster's *papaveris* but differs markedly in coloration, (*papaveris* being almost uniformly colored), in the number of discal cilia of the fore wings, in the fumation of the hind wings, in the longer, slenderer club, and in its habitus.

TABLE OF THE SPECIES.

A. Species yellowish brown, color uniform.

Joint 2 of the funicle the longest funicle joint; scape about as long as the combined lengths of the two following joints; fore wings with but a single prominent row of discal cilia.....**papaveris**

B. Species more or less black.

a. Shining black.

Antennae and legs "jaune-orange".....**clavata**

Antennae black, excepting basal three-fourths of the scape; legs brown, excepting coxae; joint 4 of funicle the longest funicle joint; scape about as long as the three following joints; fore wings with 4 longitudinal rows of discal cilia.....**metotarsa**

b. Greyish black.

Antennae concolorous, excepting first three joints, which together with the legs, are pale clay yellow. Joint 2 of the funicle the longest funicle joint; scape not quite as long as the combined lengths of the pedicel and first funicle joint.....**pulla**.

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"784. *G. Camptoptera* Först. (*Pteroclisia* Först. Hym. Stud. II 144.)
I. C. PAPAVERIS Först. Aachen. Aus Gallen V. *Aulex rhoeadis*."
1873. Snellen van Vollenhoven, S. C. Schetsen ten gebruike bij de Studie der Hymenoptera, 'S Gravenhage (Uitgegeven door de Nederlandsche Entomologische Vereeniging), 1869-1873, IV, Proctotrupiden, tabel XIII, *Camptoptera* Först.
Enlarged profile pen-drawing of the female *Camptoptera* (evidently the species *papaveris* Foerster), with enlarged male antenna. The details are incorrect for the female and as the work as a whole has been discredited, it may be assumed that the details of the male antenna are as well non-reliable.
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